

SN. 09/484,376

ATTORNEY DOCKET NO. APTI:027

IN THE CLAIMS

The status of the claims as presently amended is as follows:

1. (Currently Amended) An apparatus for controlling a control surface of an aircraft comprising:

an optical triggering circuit at a first location within a substantially benign electronic environment including a cockpit of the aircraft, wherein said optical triggering circuit generates an optical trigger signal;

a power circuit located at a second location remote from the first location within a substantially harsh electronic environment including a wing structure of the aircraft containing the control surface, wherein said power circuit includes at least one photoconductor that is responsive to the optical trigger signal generated by the optical triggering circuit; and

an optical cable coupling the optical triggering circuit to the power circuit;

wherein the power circuit is directly driven by the transmission of the optical trigger signal from the optical triggering circuit to the power circuit via the optical cable.

2. (Previously Presented) An apparatus as claimed in claim 1, further comprising a control processor coupled to the optical triggering circuit at the first location, wherein the optical triggering circuit is responsive to receipt of a command signal from the control processor to generate the optical trigger signal.

3. (Previously Presented) An apparatus as claimed in claim 1, further comprising a DC motor coupled to an output of the power circuit at the second location.

4. (Currently Amended) An apparatus as claimed in claim 1, wherein the power circuit includes at least one leg including a pair of transistors, each transistor including a base coupled in series to a corresponding photoconductor, wherein activation of the corresponding photoconductor turns on the transistor coupled thereto.

5. (Currently Amended) An apparatus as claimed in claim 4, further comprising a corresponding shunt photoconductor coupled to the base of each transistor, wherein activation of the corresponding shunt photoconductor turns off the transistor coupled thereto.

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6. (Previously Presented) An apparatus as claimed in claim 4, wherein at least one corresponding photoconductor comprises a photoconductive diode including a modified electrode structure.

7. (Original) An apparatus as claimed in claim 6, wherein the modified electrode structure includes a plurality of strips formed on a surface of the photoconductive diode.

8. (Original) An apparatus as claimed in claim 7, wherein the strips have a width of about 10 μm .

9. (Original) An apparatus as claimed in claim 7, wherein the strips have a thickness of between 0.25 – 1.0 μm .

10. (Original) An apparatus as claimed in claim 9, wherein the strips are separated by gaps having a width of about 40 μm .

11. (Previously Presented) An apparatus as claimed in claim 5, wherein at least one corresponding shunt photoconductor comprises a photoconductive diode including a modified electrode structure.

12. (Original) An apparatus as claimed in claim 11, wherein the modified electrode structure includes a plurality of strips formed on a surface of the photoconductive diode.

13. (Original) An apparatus as claimed in claim 12, wherein the strips have a width of about 10 μm .

14. (Original) An apparatus as claimed in claim 12, wherein the strips have a thickness of between 0.25 – 1.0 μm .

15. (Original) An apparatus as claimed in claim 14, wherein the strips are separated by gaps having a width of about 40 μm .

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16. (Previously Presented) An apparatus as claimed in claim 4, wherein at least one corresponding photoconductor comprises a photoconductively controlled channel transistor.

17. (Previously Presented) An apparatus ~~as claimed in claim 5, comprising:~~
an optical triggering circuit at a first location within a substantially benign electronic environment, wherein said optical triggering circuit generates an optical trigger signal;
a power circuit located at a second location remote from the first location within a substantially harsh electronic environment, wherein said power circuit includes at least one photoconductor that is responsive to the optical trigger signal generated by the optical triggering circuit; and
an optical cable coupling the optical triggering circuit to the power circuit;
wherein the power circuit is directly driven by the transmission of the optical trigger signal from the optical triggering circuit to the power circuit via the optical cable;
wherein the power circuit includes at least one leg including a pair of transistors, each transistor including a base coupled in series to a corresponding photoconductor, wherein activation of the corresponding photoconductor turns on the transistor coupled thereof, and further comprising a corresponding shunt photoconductor coupled to the base of each transistor, wherein activation of the corresponding shunt photoconductor turns off the transistor coupled thereof; and
wherein at least one corresponding shunt photoconductor comprises a photoconductively controlled channel transistor.

18. (Original) An apparatus as claimed in claim 1, wherein the optical triggering circuit utilizes a laser diode to generate the optical triggering signal.

19. (Previously Presented) An apparatus as claimed in claim 4, wherein each corresponding photoconductor can carry a current of at least 20 A for 50 ns.